

Appl. No.: 09/899,645

Filed: July 5, 2001

Page 2

Amendments to the Claims:

1. (Previously presented) An isolated nucleotide molecule comprising a nucleotide sequence selected from the group consisting of:

- (a) the nucleotide sequence set forth in SEQ ID NO: 1;
- (b) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 2;
- (c) a nucleotide sequence comprising at least 90% identity to the nucleotide sequence set forth in SEQ ID NO: 1, wherein said nucleotide sequence encodes a polypeptide having acyl-CoA thioesterase activity;
- (d) a nucleotide sequence encoding a polypeptide having acyl-CoA thioesterase activity, wherein said nucleotide sequence comprises at least 200 contiguous bases of the nucleotide sequence set forth in SEQ ID NO: 1; and
- (e) the nucleotide sequence that is complementary to the nucleotide sequence of (a), (b), or (c).

2. (Original) An expression cassette comprising at least one nucleotide molecule of claim 1 operably linked to a promoter that drives expression in a plant cell.

3. (Original) The expression cassette of claim 3, wherein said promoter is selected from the group consisting of seed-preferred promoters, chemical-regulatable promoters, constitutive and germination-preferred promoters.

4. (Canceled)

5. (Currently amended) A method for decreasing β -oxidation in a plant comprising transforming at least one cell of said plant with a nucleotide construct comprising a promoter operably linked to an acyl-CoA thioesterase nucleotide sequence, wherein said promoter drives expression in a plant cell, and said nucleotide sequence is selected from the group consisting of:

RTA01/2150233v1

Appl. No.: 09/899,645

Filed: July 5, 2001

Page 3

- (a) the nucleotide sequence set forth in SEQ ID NO: 1;
- (b) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 2;
- (c) a nucleotide sequence comprising at least 90% identity to the nucleotide sequence set forth in SEQ ID NO: 1, wherein said nucleotide sequence encodes a polypeptide having acyl-CoA thioesterase activity;
- (d) a nucleotide sequence encoding a polypeptide having acyl-CoA thioesterase activity, wherein said nucleotide sequence comprises at least 200 contiguous bases of the nucleotide sequence set forth in SEQ ID NO: 1; and
- (e) the nucleotide sequence that is complementary to the nucleotide sequence of (a), (b), or (c);

wherein the level of oil or the level of at least one oil constituent is increased in said plant or at least one part of said plant, said part selected from the group consisting of a fruit, a seed, and an embryo.

6. (Original) The method of claim 5 further comprising antisense suppression, cosuppression, or chimera-plasty.

7. (Original) The method of claim 5, wherein said part is a seed or an embryo.

8. (Original) The method of claim 5, wherein said acyl-CoA thioesterase is peroxisomal acyl-CoA thioesterase.

9. (Canceled)

10. (Original) The method of claim 9, wherein said promoter is selected from the group consisting of seed-preferred, constitutive, chemically regulatable and developmentally regulated promoters.

RTA01/2150233v1

Appl. No.: 09/899,645

Filed: July 5, 2001

Page 4

11. (Original) The method of claim 9, wherein said nucleotide construct further comprises an operably linked nucleotide sequence encoding a peroxisome-targeting signal.
12. (Previously presented) The method of claim 5, wherein said constituent is selected from the group consisting of unusual fatty acids, unusual fatty acyl chains and triacylglycerols with at least one unusual fatty acyl chain.
13. (Original) The method of claim 5, wherein said plant produces at least one unusual fatty acid.
14. (Original) The method of claim 13, wherein said fatty acid is selected from the group consisting of vernolic acid, petroselinic acid, sterculic acid, lscquerolic acid, densipolic acid, auricolic acid, *cis*-5-eicosenoic acid, *cis*-5-docosenoic acid, *cis*-5,13-docosdienoic acid, chaulmoogric acid, erucic acid, ricinoleic acid, labellenic acid, crepenynic acid and stearolic acid.

Claims 15-16. (Canceled)

17. (Original) The method of claim 5 further comprising regenerating said cell into a transformed plant.

Claims 18-20. (Canceled)

21. (Previously presented) A transformed plant comprising in its genome a stably incorporated nucleotide construct comprising a promoter that drives expression a plant operably linked to a nucleotide sequence encoding an acyl-CoA thioesterase, said nucleotide sequence selected from the group consisting of:

- (a) the nucleotide sequence set forth in SEQ ID NO: 1;

RTA01/2150233v1

Appl. No.: 09/899,645

Filed: July 5, 2001

Page 5

(b) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 2;

(c) a nucleotide sequence comprising at least 90% identity to the nucleotide sequence set forth in SEQ ID NO: 1, wherein said nucleotide sequence encodes a polypeptide having acyl-CoA thioesterase activity;

(d) a nucleotide sequence encoding a polypeptide having acyl-CoA thioesterase activity, wherein said nucleotide sequence comprises at least 200 contiguous bases of the nucleotide sequence set forth in SEQ ID NO: 1; and

(e) the nucleotide sequence that is complementary to the nucleotide sequence of (a), (b), or (c);

wherein the level of acyl-CoA thioesterase is decreased or increased in said plant or at least one part of said plant, said part selected from the group consisting of a fruit, a seed, and an embryo.

22. (Original) The plant of claim 21, wherein said acyl-CoA thioesterase is a peroxisomal acyl-CoA thioesterase.

23. (Canceled)

24. (Previously presented) The plant of claim 21, wherein said plant produces at least one unusual fatty acyl chain in its seeds.

25. (Original) The plant of claim 21, wherein said plant is a monocot.

26. (Original) The plant of claim 25, wherein said monocot is selected from the group consisting of maize, wheat, rice, sorghum, barley, millet, rye and palm.

27. (Original) The plant of claim 21, wherein said plant is a dicot.

RTA01/2150233v1

Appl. No.: 09/899,645

Filed: July 5, 2001

Page 6

28. (Original) The plant of claim 27, wherein said dicot is selected from the group consisting of soybean, *Brassica*, alfalfa, safflower, sunflower, cotton, flax, peanut and potato.

29. (Original) Transformed seed of the plant of claim 21.

30. (Previously presented) A transformed plant cell comprising in its genome a stably incorporated nucleotide construct comprising a promoter that drives expression a plant operably linked to a nucleotide sequence encoding an acyl-CoA thioesterase, said nucleotide sequence selected from the group consisting of:

- (a) the nucleotide sequence set forth in SEQ ID NO: 1;
- (b) a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 2;
- (c) a nucleotide sequence comprising at least 90% identity to the nucleotide sequence set forth in SEQ ID NO: 1, wherein said nucleotide sequence encodes a polypeptide having acyl-CoA thioesterase activity;
- (d) a nucleotide sequence encoding a polypeptide having acyl-CoA thioesterase activity, wherein said nucleotide sequence comprises at least 200 contiguous bases of the nucleotide sequence set forth in SEQ ID NO: 1; and
- (e) the nucleotide sequence that is complementary to the nucleotide sequence of (a), (b), or (c);

wherein the level of acyl-CoA thioesterase is decreased or increased in said plant cell.

Claims 31-36. (Canceled)

RTA01/2150233v1